

SCIENCE NEWS LETTER



THE WEEKLY SUMMARY OF CURRENT SCIENCE

MAY 22, 1943

TECHNOLOGY



Test Chamber

See Page 331

A SCIENCE SERVICE PUBLICATION

Do You Know?

About one-third of the wooded area of the United States, over 200,000,000 acres, is on farms.

Prunes steamed before dehydration retain the color of the fresh fruit, it is claimed, and cook more quickly than ordinary dried prunes.

Chapsticks are medicated cylindrical sticks containing camphor and other soothing ingredients issued to soldiers to protect against chapped skin or sunburn.

The most important cotton raising countries in the Western Hemisphere, named in order of the quantities produced, are the United States, Brazil, Peru and Argentina.

Whale meat, eaten in many countries, was used in the United States for food in considerable quantities during the first World War; it is dark red in color and tastes somewhat like beef.

Paiiche, a fish sometimes reaching a length of 12 feet and weighing 300 pounds, is found in the rivers in the upper Amazon basin in Peru and is highly valued as food; in Brazil it is called pirarucu.

The *sea mussel*, closely related to the oyster and clam, may become popular as food in the United States as it is everywhere else in the world; it is estimated that a million bushels could be taken this year on the New England coast.

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Most articles which appear in SCIENCE NEWS LETTER are based on communications to Science Service, or on papers before meetings. Where published sources are used they are referred to in the article.

Twenty-six sheep are required to produce enough wool to outfit one soldier for his first year of service.

Scientific investigations are being made by the government to insure effective use of industrial diamonds.

Atabrine, a synthetic replacement for quinine used in treating malaria patients, is now being produced at a rate exceeding enough to make 1,000,000,000 tablets a year, sufficient to treat 66,250,000 cases.

Silviculture experts state that an acre of forest trees may drop as many as 8,000,000 seeds in a year.

In a *Liberty Ship* approximately 225,000 to 250,000 linear feet of welding have replaced 900,000 to 1,000,000 rivets.

Soldiers in Australia between 18 and 19 years of age who have completed their military training will be used in rural mobile labor pools until mature enough to be sent to operational stations.

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PSYCHIATRY

Guadalcanal Neurosis

New and unique psychiatric war illness is result of strain of Guadalcanal campaign as bad as Pearl Harbor and Dunkirk combined. No previous sign of break.

► "GUADALCANAL NEUROSIS" is the name under which a new and unique psychiatric malady, war-caused, will probably go down in medical history. The distressing neuro-mental disease, which afflicted a considerable group of Marines invalided back to this country for treatment, was introduced to members of the American Psychiatric Association meeting in Detroit by Lieut. Comdr. Edwin R. Smith, of the U. S. Naval Hospital at Mare Island, Calif.

Every one of the 500 officers and men invalided back to this hospital, though they came from widely different backgrounds, suffered exactly the same symptoms. No possible psychiatric screening tests at recruiting stations or boot camps, he indicated, would have revealed any sign that these men would break under combat conditions.

Yet the strain of the Guadalcanal campaign, as bad as Pearl Harbor and Dunkirk combined and far more prolonged, reduced the seasoned, tough U. S. Marine to a man who, weeks after, was frequently close to tears, jumped and ran from the room at the slightest noise, wore cotton in his ears, and on the transport coming home required physical restraint if there was test firing.

"Never before in history," Commander Smith said, "have such a group of well-trained men been subjected to such conditions as the combat troops of the U. S. Marine Corps faced during the days following August 7, 1942."

"The strain and stress experienced by these men produced a group neurosis that has never been seen before and may never be seen again."

The men did not exaggerate their trials and did not like to talk about them. When seen at the hospital three weeks after combat they said they were "much better."

"But all of them in their composite story," Commander Smith said, "give a picture of physical and mental strain that combines the best of Edgar Allan Poe and Buck Rogers."

Significant, he said, is the fact that of all the men arriving at Mare Island with a diagnosis of war neurosis only 5%

came from Pearl Harbor, the other 95% coming from Guadalcanal.

Quiet, food and absolute rest were the chief features of the treatment. One of the first duties of the medical officers was to assure the men that no one could ever consider them cowards. Their trembling, nervous, upset state made them fear being thought yellow. It was pathetic, Commander Smith said, to see how grateful they were when being assured no one would think them yellow.

The period of rest should not be too prolonged or the men get restless, he said. They feel futile when working at the minor chores of occupational therapy. Decision as to their future should be made promptly and the men told of it immediately.

Most of those leaving the service should be able to return successfully to civil

life, Commander Smith said. Over 30% are being sent back to limited duty but in some cases there is a prompt return of the tension and anxiety state. A six months' period of duty in the United States before return to full duty is being tried but it is too soon yet to know how the men will stand up under this. Most of them do not know what they should or want to do except that they do not want to go back to Guadalcanal.

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No Panic on Wasp

► THE "MAGNIFICENT" behavior, with no panic at any time, of the men and officers on the aircraft carrier *Wasp* during action in combat areas and at the time of torpedoing and afterwards was described by Comdr. B. W. Hogan, the senior medical officer on board.

Only 9% reported feeling fearful and about one-third reported feeling excited, nervous, tense, and shocked immediately after the torpedo struck. Twelve hours later about half of them were fearful, apprehensive and nervous. By the time three weeks had passed, about one-third



BIG DAM—Conveyor belts play an important part in the building of this huge 444-foot earthen dam for the U. S. Bureau of Reclamation. Impervious clay for the core of the dam is brought from a borrow pit a mile and a half away by nine flights of Goodyear belts. After it is dumped at the site, it is spread in six-inch layers and tamped with sheepfoot rollers, drawn by Diesel tractors. The earth which will be packed on both sides of the core will be drawn from two other pits. The upstream side of the dam will be reinforced with heavy stones for the dam's entire height.

stated they were nervous, apprehensive and jumpy but slightly under half said they felt normal and regretful.

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Blonds Crack in Tropics

► THE AVERAGE white man is not "geared to the tropics," and blonds are especially likely to crack, Lieut. Comdr. James L. McCartney declared. Of twelve cases he described, of men invalidated back to the United States from the tropics in the present war, all with diagnosis of nervous and mental sickness, all were blonds.

They had headaches, scary dreams, low blood pressures, were easily tired, depressed, restless, had hallucinations and lapses of memory.

Why blonds are less able to stand the tropics was not explained but it may be because their skins are less able to withstand the intense sunlight. Comdr. McCartney quoted another scientist who had observed the effects of the tropics before the war and wrote that "tropical irritability is mostly due to the constant bombardment of the sun, for it is worse in blonds."

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Sports Prevent War Breaks

► MODERN EMPHASIS on raising a child to be self-reliant, and modern emphasis on success in dangerous sports such as skiing, wrestling, boxing and mountaineering has made today's soldiers much better able "to take it" than their fathers in the last war, Dr. Rene A. Spitz of New York City, declared. This new trend in child rearing, which in about 1910 turned away from the protective attitude of parents of the Gay Nineties, is responsible, he believes, for a greatly reduced number of neurotic disorders in today's army.

Less rigid military discipline, he said, is another factor helping to prevent the breakdowns that were frequent in the last war. The soldier today does not have to fight a fifth column in his own psyche, the fear of "funking" which caused nervous breakdown in his father in the trenches.

Nervous disorders can be prevented, Dr. Spitz suggested, by desensitizing the men to danger during their training if they have not already undergone this process when competing as children in dangerous physical sports.

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PSYCHIATRY

Acid for Epilepsy

Racemic glutamic acid added to normal diet to aid in warding off seizures. Electric shock treatment successful in treating middle-age illness.

► ANNOUNCEMENT of a new acidifying treatment for epilepsy and favorable reports on electric shock treatment for mental disorders of middle life were presented to the American Psychiatric Association meeting in Detroit.

The acidifying treatment for epilepsy was reported by Dr. H. Waelsch, Dr. J. C. Price and Dr. T. J. Putnam, of the New York Neurological Institute.

Methods of producing acidosis, such as starvation, protein- and fat-rich diets, exercise and drugs such as ammonium chloride have recognized value in treating seizures, or "fits," as the layman calls them, the New York scientists pointed out. Consequently they tried to prepare an acidifying substance which could be added to a normal diet over long periods of time.

Racemic glutamic acid, they found, "fulfills the requirements moderately well," and enhances the activity of other drugs given to ward off convulsions.

The benefits of electric shock treatments were stressed by a number of speakers. It is "the most useful treatment in severe cases of involutional psychoses," declared Dr. Eugene Davidoff, of Willard, N. Y.

In 30 patients suffering from a severe form of this mental disorder which is associated with the change-of-life period, 37% were much improved and 77% showed some degree of improvement, he reported. None of these patients had been helped by previous treatment with glandular preparations.

Comparing it to metrazol shock treatment, Dr. Davidoff said that electric shock causes fewer complications and can be more safely used in older patients who have some hardening of the arteries. The patients are likely to have little or no memory of the treatment, and fear reactions are not as marked as after metrazol treatment. Insulin shock, he said, is neither as safe nor as effective in these cases.

Making this treatment less hazardous to the patients is a new technique of giving a simultaneous injection of curare and strychnine with electro-shock. Success in treating 55 women with this technique during the last two years was

reported by Dr. Marcel Heiman, of Mt. Pleasant, Iowa, State Hospital. The curare is said to have a "softening" effect on the convulsions induced by electric shock and the strychnine counteracts the effect of the curare in slowing the patient's breathing.

Comparing the value of electric shock treatment in chronic, slowly evolving states of mental disorder with its effect in those cases in which "something new and dramatic" appears as the main symptom, Dr. Abraham Myerson, of Boston, found that electric shock gives only temporary relief in the chronic disorders but in cases of sudden onset a good result may be expected.

Benzedrine sulfate, familiar as "pep pills" and the ingredient of some nasal inhalators, was tried as an epilepsy remedy by Dr. Samuel Livingston and Dr. Edward M. Bridge, of Baltimore. No ill effects and definite improvement in about 25% of their patients, mostly children, were observed.

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MEDICINE

Yellow Fever Virus Lingers in Monkey Brains

► YELLOW FEVER virus is capable of surviving for several months in the brains of monkeys that have been inoculated with it and recovered, two Brazilian researchers, Dr. H. A. Penna and Dr. A. Bittencourt, of the Laboratory of the Yellow Fever Research Service, Rio de Janeiro, report. (*Science*, May 14)

Three monkeys that had received brain inoculations, and had recovered after short bouts of fever, subsequently died in the laboratory, apparently from tuberculosis, a malady to which monkeys are susceptible. Material from their brains, inoculated into mice, caused meningitis in the latter animals. Immunological tests indicated that yellow fever virus was present.

The Yellow Fever Research Service is maintained jointly by the Brazilian government and the Rockefeller Foundation.

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GEOLOGY

Mexico's New Volcano

Paricutin is seen from air and visited on foot by scientists from U. S. A. in Mexico for Physics Conference. Nestled among dead craters.

By WATSON DAVIS

► I HAVE just seen Mexico's new volcano, Paricutin, from the air and it is like having a grandstand seat at the geologic drama that shaped the face of much of this country. Dr. L. C. Graton of Harvard and I flew from Mexico City in two small planes provided by Dr. Gonzalo Bautista, governor of the State of Puebla, and piloted by Capt. Luis Martel and Lt. Carlos Cortez of Puebla's aviation school.

The air around the volcano in late afternoon proved too dusty for successful aerial observation, but a start early next morning gave almost perfect conditions for observation.

We saw Paricutin nestled among dead crater peaks, each of which in past geologic time must have had a few months of life. A great tower of smoke and dust billowed upward, with outbursts about every twenty seconds, showering red-hot pumice on the sides of the cone, which in February began to arise out of what was then a cornfield. Around the cone lay a great lava flow formed during past weeks, while to the northeast could be seen the little village of San Juan Parangaricutiro which is being smothered under several feet of volcanic ash that lies like blackish-brown everlasting snow over everything.

Our little plane buzzed about the erupting cone, keeping away from flying debris that might puncture the wing fabric or unbalance a propeller by an unlucky hit. Both planes twisted and turned for angle photographs that should be helpful to Dr. Graton in interpreting the volcano's geology.

The pilots and I spent eight hours on the previous night making a trip overland, 20 miles by airline but longer by auto, over ash-choked roads and by burro over trails for the last three miles, to the rim of the depression in which the volcano lies.

Outbursts of flame lighted the countryside for miles around, and falling incandescent sand outlined the cone. A soft, harmless rain of volcanic sand pattered down as we clambered by volcano light over lava still steaming and hot.

Our ground and air views of America's latest volcanic blister impressed on us that nature is still building the earth and that study of such infrequent outbursts should give new knowledge of how the rocks of earth were manufactured. Since our food is grown on earth made of these rocks, and since our metals for war and peace come largely from deposits in molten magmas associated with volcanic action, new practical knowledge should come from studies of Paricutin.

As we flew over the Mil Cumbres (Thousand Peaks) region between Mexico City and Morelia, we realized that each of these old cinder cones had its brief days of fire and that although the earth is young here, geologic action was old when man began to record history. There are volcanic cones by the tens of thousands in Mexico, yet only one other eruption like Paricutin is recorded. That was in 1759, when a cone called Jorullo, about 15 miles from Paricutin, was formed.

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PSYCHIATRY

Describes Mental Illness Seen in Staging Areas

► AS MANY as half the soldiers reporting at sick call in the staging areas, through which they pass just before embarkation for overseas, are partly or primarily psychiatric problems, according to estimates of the dispensary medical officers reported by Maj. Louis S. Lipschutz, of Camp Stoneman, Pittsburg, Calif., at the meeting of the American Psychiatric Association.

Of all these, however, only a small fraction have serious mental disorders. About 3% of the thousands reporting for sick call are admitted to the hospital, and 5% of such patients are sent to the neuropsychiatric division.

The others mostly come in with complaints of backache, headache, foot troubles, visual disturbances and similar symptoms of a psychosomatic nature. They are what the Army calls "gold-bricks." Putting them in the hospital is



BIG INCH—When this oil line, reported to be one of the largest ever built, is completed, it will have a capacity of 300,000 barrels per day. This photograph from the Lincoln Electric Company shows some of the welding that made it possible to rush it through in record time.

bad medicine for them because it justifies their complaints of physical symptoms and makes them worse. Equally bad is ignoring or ridiculing their complaints, because this arouses resentment which intensifies their already disturbed feelings.

If the psychiatrist can see these men promptly he can ward off many panic states and acute hysterias. Both the treatment and the prevention of the condition, Major Lipschutz indicated, consist in better indoctrination, giving the men a clear idea of what they are fighting for and its importance to them personally and to their country.

One military psychiatrist told informally a story showing the effectiveness of just such treatment. At one of the military hospitals he saw a soldier who had developed paralysis of both legs with no physical condition to account for it. This psychiatrist talked to the soldier for about five minutes, telling him what the war was all about. Then he casually said, "You may go now," whereupon the man got up, saluted, and walked out.

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Oklahoma coal reserves are estimated to be over 50 billion tons.

NUTRITION

Meat Substitute

Sprouted soy beans suggested as one solution to shortage. Are high in protein, fat, minerals and vitamins. Require no ration points.

► SPROUTED SOYBEANS, in the opinion of Dr. C. M. McCay of the School of Nutrition at Cornell University, are one answer to the meat shortage. He has worked on the problem of meat substitutes for nearly a year, with Dr. Peng Cheng Hsu, stranded Chinese student at Cornell.

The big job, they say, is to familiarize people with this valuable food. It takes a few meals to develop a liking for the soybeans, and since they contain no starch, they go well with rice and potatoes.

Dr. McCay's search even took him to New York City's Chinatown to observe bean-sprouting methods in local cellars. The sprouts are sold in bins and barrels like other vegetables. They are regarded as good meat substitutes because they are high in protein and fat; minerals, including calcium and utilizable iron; and vitamins. Best of all, they require no coupons or ration points.

The Cornell scientists worked with the light-colored Seneca variety, which is grown extensively in New York by dairy-men. They developed a quick and easy method of sprouting the beans, now possible in three to five days. Sprouted beans are preferred to the unsprouted because of ease of cooking and high vitamin C content.

All the homemaker needs to sprout them is a simple arrangement like a flower pot, into which the beans are placed and water poured over them. The water escapes at the bottom, but the beans are kept moist. Dark, damp, clean conditions are required.

A test in the Cornell cafeteria, with a few persons, revealed the need for some flavoring, as practiced in the Orient. Cooking tests are underway to develop a variety of tasty dishes, including soups, stews, and salads. Work is also being done on freezing and drying the beans.

Mass production of the sprouts offers no serious problem, in the scientists' opinion. Cheap processes can be developed for creameries, canneries, and other established manufactories. There is no waste in this vegetable, and quick cookery, from 10 to 20 minutes, like a

pork chop, makes it ready for the table. At Cornell 100 pounds of sprouts a day are easily produced for laboratory purposes.

In the post-war period, Dr. McCay says, the soybeans offer big possibilities for shipping abroad to prevent scurvy and to maintain starving populations.

A test marketing program is planned in Ithaca and the hope is to extend use of the sprouted soys throughout the state, particularly in New York City, to relieve the meat woes of harassed housewives.

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GEOGRAPHY

Amchitka and Adak Are Valuable Bases

► AMCHITKA and Adak, two of the Aleutian stepping-stones on the road from America to Tokyo, now bases for American armed forces, are exceptionally well located for offensive activities.

Amchitka is particularly so. Adak is a partway station between Amchitka and Dutch Harbor, where munitions and equipment may be held ready to rush forward to Amchitka and beyond when the usual Aleutian fogs makes transportation from Dutch Harbor or the mainland difficult. Adak's good harbors will permit bringing supplies by boat.

Amchitka is a sort of a half-way station between the North American continent and Japan or Asiatic mainland. It is almost on the great circle route from Seattle or Fairbanks to Tokyo. It is about 70 miles from Kiska and 250 from Attu. The two latter American islands, now occupied by probably some 10,000 Japs, will be cleaned up more easily as even the brief intervals between heavy fogs may be used for air attacks.

Both islands are treeless and barren. Amchitka is some 15 miles long and five wide. It has about the same area as Kiska. Building airways for bombers is reported to have been an easier job there than the Japs encountered in Kiska. During construction the Japs were kept at a distance by the American forces, according to reports, so that the airways were ready for use in a minimum of time.

Adak lies about 180 miles east of Amchitka and 450 miles west of Dutch Harbor. Kiska, only 250 miles to the west, is within easy striking distance. Adak is about 425 miles from Attu. Consolidated attacks on either Kiska or Attu seem easily possible.

The several good harbors of Adak will prove of value to warships, transports and cargo boats. Its snow-capped peaks on one hand and the warm Pacific current on the other keep the temperature without very extreme variations. Its facilities may be used throughout the year.

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GENERAL SCIENCE

Laboratory Apparatus Is On War-Scarce List

► SCIENTIFIC laboratory apparatus is on the list of scarce articles; that is unless the laboratory needing the apparatus is doing war work. Physics equipment will be particularly short because the 240,000 service men now being sent to 450 colleges and universities will all be required to take courses in physics.

The Army and Navy need hundreds of thousands of physicists and men with a knowledge of the fundamentals of physics. War is technical. Fighting, transportation and communication articles of equipment are all technical also. Most of them are based on the principles of physics. They were developed and constructed by physicists and engineers. In the military service they are used by service men, and they must be kept in repair by service men.

The institutions where these service men are now being trained will need large quantities of new apparatus. Much of their old equipment does not fit into the exact courses the armed services require. They will need also instruments of the exact types the services are using so that the trainees will be familiar with the appliances they will use in the field.

The scientific instrument manufacturers will meet the needs as far as possible. Their capacities to produce the required apparatus at this time are somewhat limited. Long ago many of them converted part or even all of their facilities to war work, constructing physical apparatus needed in the war industries and in the armed services. They will be able to produce what is needed in the college training courses for men in the service, but probably very little if any for civilian laboratories not in war work.

Restrictions placed on the purchase of

laboratory apparatus nearly a year ago by the War Production Board to save critical material and permit the factories to concentrate on war needs, have now been amended. Laboratory apparatus for the college military training programs now falls into the category of purchase orders for which applications must be made to the War Production Board, irrespective of the value of the items desired. This procedure is intended to control the distribution of the available equipment so that the war needs will be served first.

The needs of pre-induction courses in high schools will probably not be overlooked. These courses for young men who will reach induction age soon are given by the schools at the request of the Army.

Laboratories working on radio programs for the Army or Navy hereafter will be able to get from a central agency

the supply of critical electronic components not quickly available in commercial channels. This agency is the Electronic Research Supply Agency, formed under the Defense Supplies Corporation at the request of the armed services, the Office of Scientific Research and Development, and the War Production Board.

Active operation of the Electronic Research Supply Agency has already begun under an executive committee representing the government divisions concerned. Its office and stockroom is located in New York City. As a central source of electronic parts, it expects to save laboratories the necessity of building up their own complete stockpiles of components. Laboratories, however, will not be compelled to use this central agency. It is merely for their convenience.

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ster is suffering from severe emotional disorder, Dr. Lauretta Bender and Dr. Jack Rapoport, of Bellevue Hospital, New York, reported to the meeting.

Study of the drawings made by children in the observation ward at Bellevue revealed that when the children portray such aggressive animals, they are usually very ill emotionally. When they draw friendly pussy-cats or puppies or ducks, the youngsters have only mild behavior problems.

Children and primitive people identify themselves with animals, the psychologists pointed out, and this seems to apply to children who feel depressed and rejected or who suffer from feelings of inferiority.

The child may also replace the father in his drawings with an animal symbol, since children do not as yet recognize the gulf that separates human beings from the animals.

The child who draws pictures of aggressive animals may therefore be revealing fear of his father and even a desire to kill him, the psychologists said.

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PSYCHIATRY

Novel Dual Personality

Case reported to Psychiatric Association of scholar in whom amnesia united another personality with mind of new-born infant.

A STRANGE CASE of dual personality, in which amnesia united in one person a highly intelligent, learned theologian well-versed in Greek, Latin and Hebrew and also another man who was mentally like a newborn infant reaching for the moon, was described by Dr. S. Philip Goodhart, of New York, speaking before the American Psychiatric Association in Detroit.

Literature, Dr. Goodhart said, does not record a single authentic case in which the splitting between the two personalities was so complete or the suppression of knowledge of the other personality so absolute.

It happened when a young Connecticut minister was thrown from his carriage to the ground head foremost. After a period of unconsciousness, he awoke bewildered and completely out of contact with his surroundings. All previous knowledge, all memories were gone.

"He was like a newly born infant, opening his eyes for the first time upon the world," Dr. Goodhart said.

Through dream analysis, the young man was induced to re-live past experiences. One day he awoke completely restored to his original personality. After

another sleep, however, he awoke in his new personality with the knowledge and experience only of an infant. He had no knowledge of distances, so that he would reach out the window for the moon.

In his original personality, the patient was right-handed. In his infantile personality, he was ambidextrous.

The two personalities would alternate, separated by periods of profound sleep.

Medical examinations revealed no organic or physical injury to the brain, Dr. Goodhart said. The trouble seemed to be due to severe emotional conflict. In his personality as young clergyman, the patient had suffered from deep philosophical, religious and social conflicts, from which he got relief by the amnesia.

To complete the merging of the two personalities, the patient was confronted with both simultaneously. After an intense struggle, his two personalities merged and he recovered. He changed from religious work.

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Drawings Reveal Problems

► A FIERCE tiger, snake or lion drawn by a child may be a sign that the young-

"V" Symphony Reassures

► THE FAMOUS "V" signal in the opening of Beethoven's Fifth Symphony can produce an effect on mentally ill patients so cut off from the world that they cannot respond to spoken words at all, Dr. Ira M. Altshuler, of Eloise Hospital, Eloise, Mich., reported to the meeting of the American Psychiatric Association.

"Patients who are considerably disturbed or deeply withdrawn from the outer world may respond to music by a tap of the foot, a swing of the body, or a drumming of the fingers, in tempo with the music," Dr. Altshuler said. "We have observed frequently that if the music tempo is changed the tap is correspondingly affected."

The change from fast to slow tempo as in the "V" signal is reassuring, he said. Ascending scales produce a feeling of rising and a tendency to make ascending movements. Variations in pitch and volume also affect the hearer.

Music reaches the patients through that part of the brain known as the thalamus, which has to do with emotions and feeling. The spoken word, to be reacted to, must travel to the cortex and call forth response there.

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ARCHAEOLOGY

**Ancient Jade Jewels
Found in Mexico**

► ACCLAIMED by Mexican museum authorities as the most important archaeological find since the unearthing of the famous Monte Alban jewels a decade ago, several hundred priceless pieces of jade from the jungles of Tabasco are resting in vaults of the National Museum of Archaeology in Mexico City. They were brought in by an American expedition headed by Dr. Matthew W. Stirling of the Smithsonian Institution. Discovered in tombs deep in the jungle, the specimens are believed to be more than 1000 years old, of Olmeca culture.

Jadite axes numbering 70, some of them six inches long, are among the jewels. A necklace of 62 pieces, five statuettes with wide open mouths, engraved earrings and richly engraved styluses are in the treasure. One of the axes was engraved with a half-human, half-tiger figure. Jade finer than that from Java predominates in the funeral offerings of the tombs. A ring of quartz crystal, together with amber and obsidian jewels, were found.

The tombs excavated are near La Venta in the District of Huimanguillo in Tabasco. Under Mexican law such archaeological treasures are national property and become museum treasures. There is a possibility, however, that they may be exhibited in the United States after the war.

Science News Letter, May 22, 1943

CHEMISTRY

**Biotin, of Vitamin B Family,
Now Made Synthetically**

► BIOTIN, recently discovered vitamin of the B group, has been made synthetically by a four-man chemical team in the research laboratories of Merck and Company, Rahway, N. J. The exact chemical structure of biotin was announced only last autumn by Prof. Vincent du Vigneaud and associates of Cornell University Medical College. Collaborating in one phase of the work leading to the discovery of the vitamin's chemical structure were five Merck and Company researchers. Four of these, Dr. Stanton A. Harris, Dr. Donald E. Wolf, Dr. Ralph Mozingo, and Dr. Karl Folkers, immediately undertook the difficult task of putting the vitamin together artificially, and now give first news of their success in *Science* (May 14).

Like most vitamins, biotin consists mainly of carbon, hydrogen and oxygen, with two atoms of nitrogen and one of sulfur in the molecule. It has a rather complex ring structure, with one long side-chain of atoms attached to a corner of the ring.

Biotin, also known as vitamin H until its place in the vitamin B family was ascertained, was discovered so recently that its activities are not yet well understood. It is known to be necessary for the growth of yeast cells and other micro-organisms. It cures rats of the skin disease known as egg-white injury. It may play a role in cancer and has recently been found necessary to prevent a skin disease that develops in rats when given sulfa drugs.

The role of biotin in human nutrition is not yet known, but now that its synthesis has been accomplished, ample supplies should soon become available for research purposes, and a rapid increase in scientific knowledge about it can be expected. Scientists will be interested in the report that the synthesis verifies the structure assigned to biotin by Prof. du Vigneaud and associates.

Science News Letter, May 22, 1943

ENGINEERING

**New Plan For Rebuilding
Post-War Cities Urged**

► LARGE-SCALE re-design and rebuilding of depreciated and decaying central areas of our cities to bring them up to modern efficiency was urged by the committee on post-war reconstruction of the American Institute of Architects.

Planning must be changed "from the basis of the individual property to the basis of the locality and to planning for groups of properties and groups of buildings, instead of for the individual building and the individual plot."

This means democratic planning, the committee points out, but with individual initiative attuned to the needs of the community.

"Unregulated urban growth has created economic and financial problems which demand attention. Expert opinion is now pretty well agreed that growth by small units, unrelated to the larger whole district, neighborhood, and the city, is responsible for the present condition of great areas of blighted properties which are found in nearly all American cities."

Such problems of post-war reconstruction will be one of the chief subjects discussed at the Cincinnati convention of the nation's architects May 26 to 28.

Science News Letter, May 22, 1943

ENGINEERING

**United States Production
Outstrips Foreign Nations**

► THE UNITED States has produced as much war equipment in a little more than two years as Japan in thirty years, Russia in twenty years and Germany in ten, Harold V. Coes, vice-president of Ford, Bacon and Davis, Inc., told the American Society of Mechanical Engineers in his presidential address.

A 600% increase in shipbuilding since 1937 was pointed out by Mr. Coes. Whereas six years ago there were only ten shipyards with 46 ways able to accommodate the larger ships, today there are 60 such yards with more than 300 ways. One plant is now producing one 135-ton engine every day.

The 1942 increase in production of all munitions over that of the previous year was 400%, stated Mr. Coes. The rise in the production was as great as six and one-quarter times for ordnance and five times for merchant ships.

The machine tool industry's production, of vital importance in maintaining and expanding war production, is seven times the peacetime peak.

The creation in a year and a half of an entire synthetic rubber industry to produce from 800,000 to 1,000,000 tons a year was listed by Mr. Coes as one of the recent industrial accomplishments. He also stated that by the end of 1943 we will have seven times our 1939 aluminum production, the fruit of 50 years of intensive development.

Science News Letter, May 22, 1943

GENERAL SCIENCE

**Food Medal Awarded
To Former Dean of M.I.T.**

► DR. SAMUEL C. PRESCOTT, emeritus dean of science of Massachusetts Institute of Technology, has been awarded the Nicholas Appert medal by the Chicago Section of the Institute of Food Technologists, in recognition of his research on food manufacture and processing.

Science News Letter, May 22, 1943

IN SCIENCE

NE FIELDS

PHARMACY

New Medicated Gauze For Burns and Wounds

► BETTER FIRST aid treatment for burns and wounds is promised by a new methalose gauze dressing developed by Dave Brady, Robert Bauer and Fredrick F. Yonkman, pharmacologists at Wayne University, Detroit.

A soothing, healing water-soluble preparation, easily compounded and applied, are the advantages cited in a preliminary report (*Journal, American Pharmaceutical Association*, May).

Sulfanilamide and sulfathiazole, infection fighters, are dissolved in the chemical, propylene glycol, then added to a solution of alkyl cellulose. Sprayed on loose mesh gauze, this mixture makes a durable elastic pressure bandage.

Adhering readily to injured areas, the gauze tends to prevent loss of fluid and plasma proteins. The dressing can be removed at any time by soaking in water or salt solution.

Excellent first aid treatment is thus obtained, the researchers point out, without the disadvantages of greasy ointments or astringent precipitants, such as tannic acid, that kill cells in the injured area, thereby delaying healing.

Science News Letter, May 22, 1943

GENERAL SCIENCE

Model Maternity Center From Fellowship Award

► A MODEL Brazilian maternity center and a botanical encyclopaedia will result from fellowship awards made by the American Association of University Women. Modern scientific studies predominate in the research projects which outstanding women scholars, recipients of the 1943-44 \$1,500 fellowship awards, will undertake.

A Brazilian woman physician, Dr. Yvonne Parigot de Souza, will study advanced obstetrics. After learning this country's method of handling maternity and child welfare cases, she expects to set up a model maternity center in Brazil.

A botanical encyclopaedia for the Eastern United States, a twin to "The

Vegetation of Western United States" on which she is already working, will be prepared by Dr. Dorothy I. Parker of Bargersville, Ind.

Animal surgery experiments in the field of sex hormones will be conducted by Miss Elly M. Jacobsen of the University of California at Los Angeles. Dr. Elizabeth Z. Burkhardt of Clarksville, Ark., recipient of another fellowship, will study at the University of Chicago the reactions of the accessory reproductive glands of male rats to doses of hormone.

A student of pharmacology at the Harvard Medical School, Miss Harriett F. Mylander of Cambridge, Massachusetts, was awarded a fellowship to study inhibitions of the central nervous system.

The effectiveness of dental hygiene methods in the public schools will be investigated by Miss Leah Gold, Dental Hygienist of New Haven, Conn.

Miss Marguerite Young, of Terre Haute, Ind., will write a book on "Utopias on the Wabash." This will give the history of "old" New Harmony, the home of two communistic societies.

The A. A. U. W. recently conferred a new achievement award of \$2,500 upon Dr. Florence Seibert for her work in the field of tuberculosis research.

Science News Letter, May 22, 1943

CHEMISTRY

Fabrics Rendered Fireproof, Waterproof, Mildewproof

► COATING fabrics to render them fireproof, waterproof and mildewproof is now done commercially with chlorinated paraffin. This is not a new chemical; it has been known for some time, but until recently no satisfactory commercial process had been discovered by which sufficient quantities could be obtained to put it into general use.

Chlorinated paraffin is made by treating paraffin, a petroleum product, with chlorine. Hydrochloric acid is obtained as a by-product.

The new process produces chlorinated paraffin of stability and good color. It has properties which will make it usable in many commercial fields. It is non-inflammable, has low vapor pressure, and favorable plasticizing qualities.

Chlorinated paraffin does not oxidize or undergo other changes in hardening. In order to use it in the production of fabric and other coatings, and in making plastics and other products, it is compounded with cellulose derivatives, resins or other solid materials.

Science News Letter, May 22, 1943

PSYCHIATRY

Absenteeism May Be Due to Emotional Ills

► ABSENTEEISM may be due in some cases to emotional illnesses of workers, Dr. John Romano and Dr. Milton Rosenbaum, of Cincinnati, told the American Psychiatric Association meeting in Detroit.

Many defense workers have been treated by these physicians for troubles that seemed to be provoked or at least affected by the strains and stresses of their work, it was revealed.

One woman, who was of a strong masculine type, was described. This woman, when placed with all men workers, proved to be very efficient and outdid the men at their own work. This resulted in jealousy and hostility both in the woman and among the men.

The very size of the plant is distressing to some persons working in the modern huge war factories. The worker feels insignificant, insecure and in fear of losing personal identity, the physicians said. This may be a special problem for the timid, the aged and those with limited intellectual capacity.

Some are affected by the noise, especially at first, and some have difficulty in sleeping when they are on the night shift. Some women expect special privileges on account of their sex.

Science News Letter, May 22, 1943

DENTISTRY

Girls Have More Caries Than Do Boys Same Age

► GIRLS have more teeth affected by decay than boys of the same age, according to a report by Lieut. Harry J. Healey, U. S. Naval Reserve, and Dr. Virgil D. Cheyne, Indiana University School of Dentistry (*Journal, American Dental Association*, May). This statement was based on a survey made of 4,348 University of Minnesota freshman students and 3,234 students at the University of Indiana.

The difference in the prevalence of caries between boys and girls was not large, however, and Dr. Cheyne and Lieut. Healey believe that the length of exposure of the teeth in the mouth would account for this. A girl's permanent teeth come through sooner than a boy's, so that beyond this difference the authors believe that the decay bears no relation to sex.

Science News Letter, May 22, 1943

ASTRONOMY

He Spun the Earth

Modern study of the heavens is based on the work of Copernicus who died just four centuries ago. Polish astronomer will be honored May 24.

By GLENN SONNEDECKER

► THE SUN he bade to stop, and at his bidding

The earth began to spin—Poland has nurtured him.

Today this apt epigram is whispered from ear to ear by the suppressed people of Poland. For May 24 will mark the end of four centuries since the death of their countryman, Nicholas Copernicus, who first successfully challenged the erroneous ideas about our universe that man had cherished for thousands of years.

Ancient people looked about them and agreed that the great earth was the fixed center of the universe. And the sun revolved about the earth. That was just common sense—the fiery ball rose in the east and circled from overhead in the day to under the earth at night.

But early in life Copernicus—churchman, astronomer and physician—suspected something was amiss in this scheme of things. For years he observed and calculated.

Finally on his deathbed, eyes too dimmed to read, he was handed the first copy of his great work, "Concerning the Revolutions of the Heavenly Spheres." It truly brought a revolution in man's thinking about the world in which we live.

Our world, formerly considered stationary, was sent spinning through the heavens. The sun stopped its diurnal dash around the earth. Instead, the moon, the earth and the other planets revolved around the sun.

Basis of Modern Science

Copernicus revealed a new magnificent vista of the heavens. Others caught the vision and hitched their wagon to the stars, devoting their lives to learning of galaxy upon galaxy, reeling through infinite space.

On the basis of Copernican theory was built the structure of modern astronomy. As man learns of millions of other solar systems, so far away that it takes millions of years for their light to reach us, we are overwhelmed—perhaps with a pang of regret—by the truth of the

Copernican idea that man's world is, indeed, not the central or dominant point in the universe.

And the scientists who study the stars have had a peek into only a small cranny of space and know comparatively little about that. Soon, at Mt. Palomar, the biggest telescope yet will be completed. With it the stargazers expect to peer a half-billion light years into space.

New fuel will be added to the current controversy as to whether the universe is expanding, as many astronomers now believe. Certain phenomena make it seem that the stars are fleeing, much as if to avoid the contagion of our warring world. A world where the doors of the University of Krakow stand closed by an invader for the first time since Copernicus studied in its now silent halls.

It was in Krakow, just about the time Columbus set sail for America, that Copernicus became interested in astronomy. The Polish astronomer and mathematician, Albert Brudzewski, is usually credited with first inspiring the eager young student.

Studied at Bologna

Later Copernicus journeyed across the Alps for post-graduate study at Bologna University. Under the influence of his guardian uncle, a clergyman, Copernicus enrolled as a student of canon law. But through the years he kept up his study of astronomy and the sciences.

Something of a jack-of-all-trades, he even studied medicine for two years and at the same time got his doctor's degree in canon law at Ferrara.

About 1504 he assumed active duties as canon of the duchybishopric of Varmia and acted as physician and secretary to his uncle, Bishop Lucas.

Although devoting much time to healing the poor and taking part in political and religious activities, he continued his star studies, working without even the simplest telescope.

Climbing into one of the towers of the Frauenburg cathedral in Varmia, Copernicus would carefully make naked-eye observations, then labor over his calculations late into the night.

But there was no ivory-tower seclusion for Copernicus. Amid this maelstrom of activities war broke out with the Teutonic Knights in 1520, and Copernicus was promptly appointed commander-in-chief of his beleaguered city, which is now called Allenstein.

Then, as now, post-war problems required keen minds, and Copernicus took part in currency reforms of Varmia and neighboring provinces at the request of the king of Poland.

He recognized the problem of inflation and formulated the principle that when bad money is in circulation with the good, the bad regulates the value of all and drives out the good. Although this theory was not original with Copernicus, he evidently arrived at his conclusions independently and with a scientific precision not shown by his predecessors.

Remained Little Known

His discoveries in astronomy remained little known. He seemed a bit timid about pushing his own accomplishments, even as many of his scientific successors of today. Then, too, he was a faithful Christian and there was no telling what the Church might think of his revolutionary system.

About this time young George Rheticus, a college instructor, had heard of the Copernican theory and gave up his job to visit the astronomer and learn the new system at its source.

Greatly impressed by Copernicus' genius, Rheticus realized that failure, or even delay, in publishing the master's treatise would be a loss to science. So he gained permission to write up the new system in a palatable style and published the first account of the Copernican system in 1540.

It was so well received that Rheticus persuaded Copernicus to have his original manuscript published at Nuremberg. But Rheticus accepted a teaching post elsewhere and turned the job over to a clergyman, Andrew Osiander.

Osiander felt impelled to write an anonymous preface to take the curse off these revolutionary ideas and suppressed the dedicatory letter prepared by Copernicus.

When the great work rolled off the press, it began by declaring that no doubt some scholars would be offended by such heresies but that, after all, astronomical

hypotheses need not be true or even probable.

Perhaps this disarming note was a blessing in disguise. For the Church overlooked the revolutionary importance of Copernican theory until 1616, when the treatise was placed on the Index.

But Copernicus had started the earth and the planets spinning through space. He revolutionized man's outlook on the universe and helped usher in the era of modern science.

The new truth was to struggle for two centuries for recognition and acceptance. But as early as 1721 in our own country, Cotton Mather conceded that the "Copernican hypothesis is now

generally preferred," and that "there is no objection against the motion of the earth."

Now, 400 years after the death of Copernicus, scholars and scientists everywhere pause to pay tribute to his memory. A Copernican Quadracentennial program has been planned for May 24 under the sponsorship of the Kosciuszko Foundation to foster cultural relations between the people of the United States and Poland.

Both are fighting to make the world free for scientific thought and development for which the great Polish astronomer stands.

Science News Letter, May 22, 1943



PSYCHOLOGY

Good Diet Raises IQ

Children tested when under-nourished and again when getting good diet showed increase of as much as 18 points IQ. Only very young helped.

► INTELLIGENCE of undernourished little children can be increased as much as 18 points IQ by proper diet, Dr. I. Newton Kugelmass, New York physician, told the meeting of the American Association on Mental Deficiency in New York.

Dr. Kugelmass reported the results of IQ tests of 182 children who were malnourished at the time of their first mental tests and well nourished when the second test was given. The rise in IQ points averaged 10 points IQ for mentally retarded children up to as much as 18 points for the mentally normal. Children who were well nourished when both tests were given showed no such mental improvement.

Unfortunately, the increase in intelligence is insignificant, however, if the poorly fed child is over four years old. The younger the malnourished child, the better the chance that good food will help the mind.

Science News Letter, May 22, 1943

Asphyxia Dulls Minds

► SUFFOCATION of babies during the process of birth or before may make them feeble-minded, the meeting learned from the report of Dr. Stanley S. Lamm, of the Long Island College of Medicine.

"The cells of the brain are particularly susceptible to lack of oxygen," Dr. Lamm said. "And asphyxia which primarily

leads to deficient oxygenation of the blood is a potent cause of mental deficiency."

"Premature babies," Dr. Lamm added, "are especially susceptible." Efforts should be made, he said, to delay their birth until they are large enough to withstand the hardships of birth.

Complications of labor, including the excessive use of anesthetics and sedative drugs, may lead to the partial suffocation of the infant.

Recognition that asphyxia has a part in producing mental deficiency may lead to a reduction in the number of such cases, Dr. Lamm predicts.

Science News Letter, May 22, 1943

Defectives in Army

► MENTAL defectives are making good as paratroopers and in other branches of the armed services, Dr. Robert H. Haskell and Dr. Alfred A. Strauss, of the Wayne County Training School, Northville, Mich., told the meeting.

The first hundred high grade mental defectives known to have enlisted or to have been drafted after rehabilitation in the Training School were checked up on by the physicians after the boys had been six months in service. The majority had made good and 30% had been promoted.

A third of the boys were paratroop-

COPERNICUS — Founder of astronomy.

ers, cavalrymen or in other special services. Some others were in the Navy and Marine Corps.

"The ultimate decision as to the fitness for military service of high grade and borderline mental defectives has to be carefully weighed," Dr. Haskell commented, "between community protection against later costly casualties and fairness to individuals willing and capable of serving their country."

Science News Letter, May 22, 1943

ENGINEERING

Transparent Test Chamber Made From Bomber Nose

See Front Cover

► INGENUITY made it possible for radio engineers making altitude tests of radio equipment to speed up their work, and at the same time improve it.

The unfinished plastic nose of a famous American bombing plane was put to use as a transparent chamber for the stratosphere tests. The clear vision it affords on all sides makes it possible for several engineers to test and inspect any piece of radio apparatus at one time, and eliminates the difficulties encountered in the older type of test chambers made of metal and with only small ports to peer through.

The new test chamber, pictured on the front cover of this week's SCIENCE NEWS LETTER, is a development of the RCA Victor Camden Plant.

Science News Letter, May 22, 1943

GENERAL SCIENCE

Academies Cooperate

Fourteen state junior and senior academies of science work with Science Clubs of America to provide opportunities for talented science students.

► FOURTEEN state Junior and Senior Academies of Science are cooperating with Science Clubs of America in the promotion of opportunities for talented science students.

At least six other Academies are making arrangements now to cooperate and will assume this project in their states in the next few weeks.

In Georgia, Illinois, Kansas, Maryland, Michigan, Minnesota, Mississippi, Missouri, New York, North Carolina, Pennsylvania, South Carolina, Texas, and Virginia a boy or girl who wishes to become a scientist can now count on joint assistance and encouragement from the adult scientists in his State Academy of Science and from the national organization, Science Clubs of America, administered by Science Service.

This cooperation between the state and national organizations will result in more opportunity for promising young scientists. America needs more scientists. SCA and the cooperating Academies have set it as their task to see that there shall be more scientists and better ones.

The 14 cooperating state organizations are: Science Division of Georgia Education Association, Illinois State Academy of Science, The Kansas Academy of Science, Maryland Academy of Sciences, Michigan Academy of Science, Minnesota Junior Academy of Science, Mississippi Academy of Science, Missouri Academy of Science, The American Institute of the City of New York, North Carolina Academy of Science, Pennsylvania Academy of Science, Junior Academy of South Carolina, Texas Academy of Science, Virginia Academy of Science.

It is expected that many more states and regions will prepare to tie their efforts in with Science Clubs of America so that all concerned can provide maximum help to youthful scientists.

Today Science Clubs of America has 2,228 clubs affiliated in all of the 48 states and also in Alaska, Canada, Canal Zone, Cuba, Hawaii, Puerto Rico and South America. Each club averages 25 members. Ages of members range from 10 years up. Younger clubs study general science and explore all fields; but those with members 15 years of age or more tend to narrow their study to specific fields such as radio, physics, aeronautics, microbiology, thermodynamics, meteorology, etc.

Many of these state and regional organizations have for years sponsored Junior Academies of Science that lend aid and assistance to young scientists, in many cases through science clubs.

A high spot in most of their programs was an annual state or regional meeting at which the youthful scientist had an opportunity to meet and mingle with the prominent scientists of his area. The gasoline and rubber shortage has outlawed this important meeting in most regions. But many Academies have planned small localized meetings so that this impressive type of conference can still reach most of the juniors of the state.

Another factor has entered the picture to challenge the ingenuity of scientists and educators. At the same time that curricula have swollen, with needs for science trained teachers, war and war industries have taken many of the finest away. Schools are now faced with the problem of providing enough science teachers and of providing quick training for untrained and inexperienced teachers that have been switched from other fields or have just entered the profession. To bolster this situation the Academies of Science have rushed in with more assistance for the youths that show unusual aptitude for science. Many a fortunate boy and girl will come under the direct tutelage of eminent scientists even during his high school days if he is in a science club.

The science club has become the most

sought-after-club in the school. Here are training our future plane pilots and bombardiers, our chemical warfare men, nurses and doctors, our sorely needed physicists and chemists, and dozens of other kinds of embryo scientists. Many of these clubs are working after school hours conducting their studies without aid from over-worked faculty. It is such groups as these that need and will appreciate the help that is coming from the cooperating Academies of Science and Science Clubs of America.

SCA will continue to form and organize and bring together science clubs of all ages and sizes and will supply them liberally with free program and source materials, but the state and regional organizations will give the inspiring personal touch so necessary to keep the spark of ambition alive and flourishing in young scientists. Information on both national and state science activities may be obtained from Science Clubs of America, 1719 N St., N.W., Washington, D.C.

The Annual Science Talent Search for the Westinghouse Science Scholarships administered by Science Clubs of America, will provide opportunity for young scientists who have insufficient funds to continue their education. In the Second Annual Science Talent Search completed in March 1943, 15,000 high school seniors participated. Three hundred received honorable mention and 40 were given Westinghouse Science Scholarships but many more have received scholarships and other financial assistance directly from colleges and universities seeking able students. It is hoped that each year more and finer students will be helped into scientific careers through this nation wide contest.

World famous scientists who make up the membership of the cooperating Academies of Science will strengthen the SCA program. This cooperation will assure America it will get the scientists it needs in spite of all difficulties.

Science News Letter, May 22, 1943

Space can be saved in the *Victory Garden* by training squash and cucumber vines on a trellis or fence, by raising pole beans, and staking tomatoes.

● RADIO

Saturday, May 29, 1:30 p.m., EWT

"Adventures in Science" with Watson Davis, director of Science Service, over Columbia Broadcasting System.

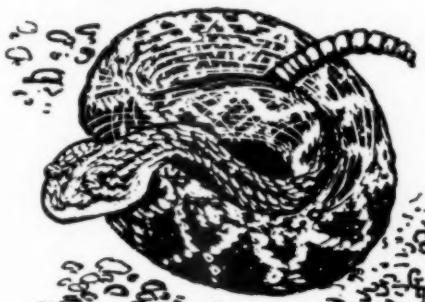
Dr. Caroline A. Chandler, of the U. S. Children's Bureau, will discuss "Protecting the Health of Young Workers in Wartime."

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Speaking of Snakes

► POISONOUS SNAKES are one of the first terrors of the tropics that fond relatives think of when their special soldier is ordered overseas. Actually, states Dr. Doris M. Cochran of the U. S. National Museum, the chances of being bitten by poisonous snakes are exceedingly small. And the victims themselves are often contributors, through excess of curiosity or foolhardiness: one person out of every 15 bitten receives the bite while handling or "playing" with a poisonous snake.

This does not mean that snakes are harmless; far from it. But relatively few of them actually go out of their way to look for a fight, and those that do are the biggest and wickedest among venomous serpents, like the bushmaster of Central America and the king cobra of southeastern Asia.

Indeed, many of the deadliest, including the coral snakes of our own continent and the ugly, thick-bodied rhinoceros viper of Africa, will put up with a great deal of handling before they suddenly strike. The deadly little krait of India is particularly obstinate at this deceptive trick of "playing 'possum," Dr. Cochran states.

So far as numbers of venomous serpents are concerned, and likelihood of encountering them, we probably do just about as well right here in the United States as any tropical country. We have several species of rattlesnakes, the larger of which are "plenty pizen," though the little pygmy rattlers are not especially dangerous.

Then we have two species of coral snakes, one in the dry Southwest, the other in the moist Southeast, the latter with an extension of its range up the Mississippi and lower Ohio floodplains.

There is also the pugnacious water moccasin or cotton-mouth and its more widely distributed cousin, the copperhead.

The United States and Mexico also share the dubious fame of harboring the two solitary species of lizards known to be poisonous, the Gila monster and its near relative, the beaded lizard.

The only comfortable place for a soldier afflicted with ophidiophobia (that's what ails you if the mere sight of a snake makes you ill) would be in the Far

North, and on some fortunate islands, like Ireland, Iceland, most of the West Indies and practically all of Polynesia, including New Zealand.

Snakes can't stand the climate much north of the Canadian border; though one hardy European viper has been seen above the Arctic Circle in Scandinavia. Their absence from many temperate and tropical islands seems to be largely a matter of transportation lack, for most snakes cannot swim.

The one exception, however, makes the



"Dear Mom . . . I never felt better in my life"



ISN'T it wonderful to get a letter like that from your boy wherever he is . . . Iceland, Ireland, Australia, or a camp in the U. S. A.

Remember how you used to worry about his health when he was a little fellow . . . how secure you felt in the house on Greene Street because it was just around the corner from Doc Brown's?

Right now your boy is getting the finest medical care in the world. No matter where he is, he's never farther than "just around the corner" from an army doctor . . . and a mighty good doctor he is, too.

That doctor, as all American doctors are, is armed with the knowledge that has grown out of advanced microscopical research . . . research that was made possible by Bausch & Lomb's introduction to the world of quantity production of quality microscopes.

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Navy no refuge for snake-fearers, for the flat-tailed sea snakes (no kin to the mythical sea serpent!) that swarm in the warm seas around southern Asia are real snakes, all right, and highly venomous. Just one member of this group has some-

how found its way into tropical American waters.

Dr. Cochran's discussion of venomous reptiles is offered in a new Smithsonian Institution publication, tenth in the series listed as War Background Studies.

Science News Letter, May 22, 1943

PSYCHIATRY

War Nerves Predicted

Considered inevitable for three out of four merchant seamen who have been torpedoed or bombed. Men need gentle care when first rescued.

► WAR NERVES are inevitable for at least three out of four of the merchant seamen subjected to torpedoing or bombing.

This is the finding of four New York physicians who have made a special study of seamen waiting their turns to go to sea again.

Many of the men do go back to sea in spite of persisting difficulty with war nerves, it is stated, and repeated catastrophes at sea will add cumulatively to the troubles of a man who has not yet recovered from his last tragedy. A period of convalescence in a rest camp is recommended in the report which appears in *War Medicine* (April). The physicians reporting are Drs. Sydney Margolin, Lawrence S. Kubie, Mark Kanzer and Leo Stone, all of New York.

The doctors give this advice: If you

should ever help in the rescue of seamen from a torpedoed ship, do not be afraid that a show of patience, sympathy and gentleness will "coddle" the men into an increase of emotional outburst. Gentle care does not encourage emotional upsets, as the layman often imagines, but is essential to their relief and prevention.

"The men should never be bullied or shamed into suppressing their feelings," the physicians warn, "but should rather be encouraged to go off by themselves for a chance to blow off steam alone so that one man's upset will not become a source of disturbance to the others."

The ordeals faced by these seamen ranged in severity from having their ship torpedoed without being sunk or with little or no injury to the personnel up to the major catastrophes in which the men were severely hurt or burned and

suffered prolonged exposure to cold, hunger and thirst; were trapped by fire or debris; watched other men killed or injured all around.

"Perhaps the worst situation occurs," the physicians state, "whenever a group of men are trapped in a spot from which only a few can escape. Escape from such a predicament leaves the survivors haunted by the memory of those who were left behind, with a sense of guilt as great as if they had murdered them."

The severity of the case of war nerves is not matched to the severity of the experience as closely as would be expected. In some cases there was little or no effect. In the most severe cases there were persisting symptoms that make it inadvisable for the man ever to go back to sea.

Some men faced with tragedy at sea are calm and self-possessed, make a careful choice between various possible avenues of escape, weigh the relative risks rapidly and act freely. Other men show blind confusion and panic, child-like states of terror, rage or stupor-like trance states. Some men clung to a red hot rail, or buried their heads between their arms. Some leaped blindly into a blazing sea when they might have escaped in another direction where there was no burning oil.

Later symptoms include terrible nightmares in which they re-live the catastrophe with details so vivid and terrifying that the men are wakened up and driven out of their rooms "to seek the comfort of human companionship much as a terrified child climbs into a parent's bed." During the day, the men may have sudden "startle" reactions. There are sudden attacks of intense restlessness which drive them to get up and dress in the middle of the night and to walk endlessly, blindly seeking human companionship or oblivion in drunkenness.

Seamen who show signs of being disturbed should be treated if possible before they are allowed to go home or to their usual haunts, the physicians recommend. Otherwise the undischarged neurotic disturbance will attach itself to their everyday walks of life, interfering with their ultimate return to sea and becoming more resistant to treatment.

After a period of rest and convalescence, seamen who have had serious disturbances should have a graded return to sea duty, the physicians urge. The first trip should be on a safe route such as inland waters or shore waters, proceeding from this to convoys in not too exposed areas and finally to routes which are exposed to full danger.

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The men should have drills in mutual aid such as firemen's drills in carrying unconscious or injured men up and down ladders, how to leap into the sea alone and with injured men, breaking the hold of panic-stricken men on other men or on a sinking ship and how to care for men with severe burns or other injuries. All this will generate a sense of individual security and group solidarity under stress.

The physicians also urge the preparation and distribution of a booklet on psychiatric as well as physiologic first aid.

Science News Letter, May 22, 1943

PSYCHIATRY

Patient Sees Everything As Growing Small

► THE STRANGE case of a seventeen-year-old boy who saw objects around him getting small and even felt himself get small, just like the heroine of Alice in Wonderland, was reported by Dr. Ernest Lewy of the Menninger Clinic, Topeka, Kansas, at the meeting of the American Psychoanalytic Association.

Unlike Alice, this patient did not have to get small to fit the shrunken size of things around him, though he did report that he was afraid to put his underwear on because it seemed so small. He saw things small, Dr. Lewy explained, as a defense mechanism against feeling small himself.

The state of seeing things small is called micropsia. Dr. Lewy's patient experienced it during the onset of a severe mental illness and also when he was recovering from it, but not during the illness itself. It occurred when he was feeling "low" and losing his sense of reality, and seemed to represent a feeling or fear of imminent disintegration of the ego.

The feeling of smallness has a parallel in everyday life as shown by such expressions as "cutting him down" or making another person feel small, Dr. Leo H. Bartemeier, of Detroit, commented. His explanation of the patient's feeling and seeing small was that it was dictated by a sense of guilt as a method of appeasing his conscience which threatened him with the fear of losing his masculinity.

When Lewis Carroll wrote of Alice seeing small and growing small in her dream, he was, Dr. Lewy said, using the intuitive knowledge which poets and novelists sometimes have of conditions psychiatrists see in their patients.

Science News Letter, May 22, 1943

• New Machines and Gadgets •

❖ A MINIATURE wind tunnel and wing section now on the market can be used by school students taking a pre-flight course. It shows what makes a plane spin or stall and just how the ailerons and flaps work.

Science News Letter, May 22, 1943

❖ A NEW SIGNAL LAMP for aircraft operates by "black light" thrown on a fluorescent indicator. It shows up in sunlight or total darkness and is said to improve vision in night flying.

Science News Letter, May 22, 1943

❖ PLASTIC HINGES, strong and lightweight, may be cut in any length and attached by adhesives, rivets or screws. One aircraft producer uses the new hinges on tool boxes, radio, map and chart cases, and other equipment.

Science News Letter, May 22, 1943

❖ SPECIAL REFRIGERATION equipment installed in army and civilian flying fields is used to kill moths in aviators' wool and fur-lined flying suits. Killing results from shock cycles of repeated heating and cooling treatments.

Science News Letter, May 22, 1943

❖ A NEW DEVICE reduces the daily time-consuming task of winding your watch to about two seconds and eliminates "finger fatigue and calluses." In watch testing laboratories, where many



watches must be wound each day, it has a real practical advantage. The device is a strip of fabric-backed polyvinyl plastic on a paddle a foot long. Along this, the winding stem is drawn in one motion.

Science News Letter, May 22, 1943

❖ AN IMPROVED electronic device is used by the Army to standardize camouflage colors. It can distinguish between 2,000,000 different colors.

Science News Letter, May 22, 1943

❖ A LEAF SPRING landing gear for training planes has been drop-tested, flight-tested and approved, and will be installed on 25 training planes for further testing, it is reported. When the airplane hits the ground the spring gear spreads out and the wheels dampen the rebound. Made from non-critical steel plate, the gear is cheaper than the present strut and saves time in construction.

Science News Letter, May 22, 1943

❖ A NEW TRANSPARENT phonograph record has a glass base and a smooth plastic surface. It is reported to reproduce tones with a high degree of accuracy.

Science News Letter, May 22, 1943

❖ IMPROVED GLASS gages are replacing steel gages in Army factories and arsenals. The new glass gage is more easily handled, furnishes greater visibility, does not rust, and has better wearing qualities.

Science News Letter, May 22, 1943

If you want more information on the new things described here, send a three-cent stamp to Science News Letter, 1719 N. St., N. W., Washington, D. C., and ask for Gadget Bulletin 157.

The world's more important phosphate reserves are in the United States, Russia and North Africa, all territory under control of the United Nations; without phosphates German farms will produce decreased crops.

The dairy industry is asking that dry skim milk be known as dry milk solids or defatted milk solids because of a wrong belief that skim milk has little food value.

A new rip-proof fabric called five-harness sateen, has been developed for the Army mountain troops; it is claimed to have high tearing strength and superior wearing qualities.

First Glances at New Books

► CHEMICAL WAFARE is a phrase that not unnaturally causes most of us to shudder, since the gas-threatened front spreads over the whole world. Like every specter, this one loses some of its terror when we learn more about its nature, and especially what to do about it. A wide and interested audience is therefore assured for the second, revised edition of *Noxious Gases*, by Yandell Henderson and Howard W. Haggard (*Reinhold Publ. Corp.*, \$3.50).

Science News Letter, May 22, 1943

► PEOPLE argue less about evolution nowadays, think about it more. Some of the most intensive thinking on the subject that has been done lately is set down in *SYSTEMATICS AND THE ORIGIN OF SPECIES*, by Dr. Ernst Mayr, noted zoologist on the staff of the American Museum of Natural History. He pays particular attention to the geographic factors that figured so largely in the pioneer writings of Darwin and Wallace. (*Columbia University Press*, \$4.)

Science News Letter, May 22, 1943

► CAN OUR CITIES SURVIVE? demands José Luis Sert, (*Harvard Univ. Press*, \$5.) of the International Congresses for Modern Architecture, and he answers Yes, they can, if they will adapt to the conditions of a new and fast-changing world. With graphic pictures and maps he poses the present, often dismal-looking problems—but also at least a few hopeful ventures in the direction of a better way.

Science News Letter, May 22, 1943

► GEORGE WASHINGTON CARVER was one of the most remarkable persons of the present generation. His original, often unorthodox methods in chemistry, his tireless efforts on behalf of his fellow-Negroes, his deep religious feeling, are sympathetically and vividly portrayed in a new biography by Rackham Holt (*Doubleday Doran*, \$3.50.)

Science News Letter, May 22, 1943

► AN EYEWITNESS account of the Allied battlefields of the world is the beautifully written *JOURNEY AMONG WARRIORS*, by Eve Curie (*Doubleday, Doran*, \$3.50). Mlle. Curie's trip to Africa, Russia and Asia gave her an opportunity not only to talk to the soldiers, their commanders, but also their prisoners, and to interview high government

officials, and just "plain people." Her descriptions of the countries through which she travelled add to the interest of this book which should be on the reading list of every thinking American.

Science News Letter, May 22, 1943

► ALREADY A CLASSIC, Vilhjalmur Steffansson's *THE FRIENDLY ARCTIC* appears in a new edition, especially timely now, when our men are standing guard and sailing ships above the Circle, all the way from Murmansk to Point Barrow. (*Macmillan*, \$5.)

Science News Letter, May 22, 1943

► MINERALS AND ROCKS, by Russell D. George, (*Appleton-Century*, \$6), veteran geologist of the University of Colorado, is a complete, well-illustrated manual that will appeal to professionals and serious amateurs alike.

Science News Letter, May 22, 1943

► EXPLOSIVES are matters of interest to everyone nowadays. Which makes timely the appearance of Vol. II of the Lefax Manual for Explosives Laboratories, titled *EXPLOSIVE COMPOUNDS AND ALLIED SUBSTANCES: A DESCRIPTIVE LIST*. (*Lefax, Inc.*, \$2.25) Like all Lefax books, it condenses a great deal of information into a minimum of words; the loose pages are punched for ring-book binding.

Science News Letter, May 22, 1943

► NOT ONLY the physician but the veterinarian is not able to come so quickly nowadays. Many "vets" are in the Army, and those left in private practice are spread much thinner. Emergencies can be met, to some extent at least, with the aid of *THE HOME VETERINARIAN'S HANDBOOK*, by E. T. Baker (*Macmillan* \$2.50). Ailments and remedies are listed alphabetically and briefly described.

Science News Letter, May 22, 1943

Just Off the Press

THE ASBESTOS FACTBOOK—"Asbestos", 16 p., 10 c. Pamphlet.

AFRICA: Facts and Forecasts—Albert Q. Maisel—*Duell, Sloan & Pearce*, 307 p., photographic maps, \$2.75.

BASIC PHYSICS FOR PILOTS AND FLIGHT CREWS—E. J. KNAPP—*Prentice-Hall*, 118 p., \$1.65. A very condensed course, following CAA outline.

CONSTRUCTION-MAINTENANCE AND REPAIRING OF AIRCRAFT INSTRUMENTS—J. A. Gordon—*Henry Paulson*, 29 p. Reprinted from the Horological Journal, London, Eng., free for aviation students upon direct application to Henry Paulson & Co., 37 S. Wabash Ave., Chicago, Ill.

DOWN-ON-THE-FARM COOK BOOK—Helen Worth—*Greenberg*, 322 p., \$2.50.

EARLY NATURALISTS IN THE FAR WEST—Roland H. Alden and John D. Ifft—*California Academy of Sciences*, 50 p., \$1.

AN ENQUIRY INTO PEOPLE'S HOMES—Report prepared by Mass-Observation for The Advertising Service Guild—John Murray thru *Transatlantic Arts*, 228 p., \$3.

FORWARD WITH SCIENCE—Rogers D. Rusk Knopf, 312 p., illus., \$3.50.

AN INTRODUCTION TO CELESTIAL NAVIGATION—William H. Barton, Jr.—*Addison-Wesley Press*, 44 p., 50 c. Brief text for students entering the armed services and for refresher purposes. A companion book is *Stereopix*, three-dimensional charts of novel usefulness.

LIFE THROUGH THE AGES, is a Story of Change—*Stanford Univ. Press*, chart, 50 c.

MATHEMATICAL STATISTICS—S. S. Wilks—*Princeton Univ. Press*, 284 p., \$3.75.

MITCHELL! PIONEER OF AIR POWER—Isaac Don Levine—*Duell, Sloan and Pearce*, 420 p., illus., \$3.50. First biography of a dra-

matic personality through which is woven an account of the struggle for air power. MODERN PHYSICS—Charles Elwood Dull—*Holt*, 522 p., illus., \$2. Revised ed. textbook.

ORGANIC SYNTHESSES—A. H. Blatt—*Wiley*, 654 p., \$6.50 Collective vol. 2. A revised edition of annual volumes X-XIX.

THE ORIGIN AND DIFFERENTIATION OF THE LARVAL HEAD MUSCULATURE OF TRITURUS TOBOSUS (Rathke)—Arthur G. Rempp—*Univ. of Calif. Press*, 40 p., illus., 50 c. University of California publications in Zoology, vol. 51, no. 3.

THE PLEISTOCENE BIRDS OF SAN HOSECITO CAVERN, MEXICO—Loye Miller—*Univ. of Calif. Press*, 24 p., 35 c. University of California publications in Zoology, vol. 47, no. 5.

A REMARKABLE REVERSAL IN THE DISTRIBUTION OF STORM FREQUENCY IN THE UNITED STATES IN DOUBLE HALE SOLAR CYCLES, OF INTEREST IN LONG-RANGE FORECASTING—C. J. Kullmer—*Smithsonian Institution* 20 p., including charts, 20 c. (Smithsonian Miscellaneous Collections Volume 103 No. 10 (End of Volume) Roebling Fund.)

SPANISH AT SIGHT—Clark Stillman and Alexander Gode—*Thomas Y. Crowell*, 95 p., illus., \$1.25. New approach to language learning.

TERTIARY PRAIRIE GRASSES AND OTHER HERBS FROM THE HIGH PLAINS—Maxim K. Elias—*Geological Soc. of America*, 176 p., illus., \$1.50 Geological Society of America, Special Papers, no. 41.

ULTRA-HIGH-FREQUENCY TECHNIQUES—J. G. Brainerd, Glenn Koehler, H. J. Reich and L. F. Woodruff—*Univ. of Illinois*, 570 p., \$4.50.